

## Title

## Gloves

## Background of the Present Invention

## Field of Invention

5           The present invention relates to hand protector, and more particularly to a glove which comprises a surface treatment arrangement detachably provided thereon so as to facilitate a wide range of surface finishing and cleaning tasks.

## Description of Related Arts

10           Various kinds of surface finishing and cleaning devices have widely been utilized for a wide range of purposes. And depending on this wide range of purposes, such surface finishing and cleaning devices have also been developed and implemented in a wide range of forms. For instances, sand papers have been invented for polishing small scale work pieces, such as a bedroom accessory, whereas grinding machines have been developed to polish large scale or strong work pieces, such as a metal-made plastic  
15 injection mold.

          Such surface finishing and cleaning devices may customarily be divided into two categories, namely, machine-driven type, such as a grinding wheel, and hand-driven type, such as a regular sand paper, which is the subject of development of the present invention. Hand driven type of surface finishing cleaning devices obviously has many  
20 advantages. They are generally cheap, suitable for small-scale fine work pieces with and domestic accessories, easy to use, and most importantly, convenient in terms of their operations and storage.

          Yet their advantages should not harbor their deep-seated disadvantages. First of all, for some medium sized work pieces or accessories, especially for those which have  
25 been used for a considerable period of time, it is usually quite inefficient for them to have hand-polished by just using a sand paper. However, on the hand other, it may be too

expensive, infeasible or unrealistic for them to have machine-driven type's treatment. For instances, a housewife, may need to remove the oxides formed on the surface of a fairly large cooking wok. Accordingly, in such situations, because of having little feasible choice, one may nevertheless utilize a tiny sand paper for surface finishing a fairly large part of a particular domestic accessory, yet suffering at best inefficient, and at worse, harmful working condition. Harm may be induced when the person accidentally slip the sandpaper from his hands, thus making his hand forcefully rub over the surface of the work piece or even a grinding surface of the sandpaper. In other words, conventional methodology of utilizing sand paper provide inadequate protection to the hands by which one grasps it for surface finishing.

Equally remarkable is that by using hands for grasping the sandpaper, the maximum possible working area for the polishing work is substantially limited. It is impossible for a user to grasp sandpaper larger than a user's hand size for polishing work because the sandpaper only polishes when a substantial amount of force is applied normally to the treatment surface. Hence, when the sandpaper is so large that a substantial part of the sandpaper is not grasped by hands, that part would have minimal working efficiency as little normal pressing force can be practically applied thereon.

In addition, in order to hold the sandpaper tightly, the user must use his or her fingers such that the sandpaper can be securely held in position. Therefore, once the user uses his or her fingers to hold the object, his or her hand is unavailable to do other work. For example, the housewife must release the cleaning mop in order to pick up a dish for cleaning purpose. The cleaning operation looks simple that every housewife does the same thing. However, for commercial or industry point of view, the cleaning operation is inefficient that the cleaner must repeatedly drop down the cleaning mop and pick up the dish.

One may utilize some external objects, such as a piece of wood of suitable size as a supporting base wherein a bottom surface of the sandpaper wrap around the peripheral of the wood in such a manner that the user is capable of grasping the wood which is wrapped with the sandpaper, instead of only a piece of sandpaper, for more effective and efficient surface finishing. Despite a smart arrangement, it is worth pointing out that finding such a suitable object is not guaranteed. Much would depend on the circumstances of a particular working environment and the nature of the corresponding work piece.

Given these difficulties concerning conventional sandpaper polishing, plus the reality that it is often quite impossible or unrealistic to depend on machine-type polishing, enhanced mode of surface finishing or cleaning with a view of overcoming the above-mentioned disadvantages is therefore required.

## 5 Summary of the Present Invention

A main object of the present invention is to provide a glove which comprises a surface treatment arrangement detachably provided at the palm portion of the glove, by means of hook and loop fasteners, for effectively and efficiently facilitating a variety of surface finishing and cleaning tasks by hand.

10 Another object of the present invention is to provide a glove, wherein the surface treatment arrangement providing an optimal working surface area as desired by a user for optimal surface finishing or cleaning. In other words, regardless of what the working surface area is, the treatment is upheld to be of maximum effectiveness and efficiency.

15 Another object of the present invention is to provide a glove, wherein the surface treatment arrangement is provided at the palm portion of the glove such that the user is free to use his or her fingers to do other work so as to enhance the efficiency of the finishing or cleaning operation.

20 Another object of the present invention is to provide a glove, wherein the surface treatment arrangement fits on the operation side of the glove for efficient and effective surface finishing or cleaning while substantially protecting a hand of the user during the surface finishing or cleaning work.

25 Another object of the present invention is to provide a glove, wherein the surface treatment arrangement does not interfere with the design and operation of the glove so as to minimize the manufacturing and related cost of the present invention.

Another object of the present invention is to provide a glove, wherein the glove with the surface treatment arrangement is easy to operate and convenient to be stored.

Accordingly, in order to accomplish the above objects, the present invention provides a glove for treating on a work surface, comprising:

a glove body, which is adapted for receiving a hand of a user, having a palm portion and finger portions extended therefrom; and

5 a surface treatment arrangement, which comprises:

a treatment pad, adapted to provide a first treating action, provided at the palm portion of the glove body for treating on the work surface; and

10 a treatment member, adapted to provide a second treating action, comprising a fastener adapted to overlappedly fasten with the treatment pad in a detachably attaching manner so as to retain the treatment member at the palm portion of the glove body in such a manner that the glove body selectively provides the first treating action and the second treating action by selectively fastening the treatment member with the treatment pad for treating on the work surface.

15 These and other objectives, features, and advantages of the present invention will become apparent from the following detailed description, the accompanying drawings, and the appended claims.

## Brief Description of the Drawings

Fig. 1 is a perspective view of a glove according to a preferred embodiment of the present invention, illustrating the use of the glove for cleaning purpose.

5 Fig. 2 illustrates an alternative mode of a treatment pad of the glove according to the above preferred embodiment of the present invention.

Fig. 3 illustrates an alternative mode of the treatment member of the glove according to the above preferred embodiment of the present invention.

10 Fig. 4 illustrates an alternative mode of the surface treatment arrangement of the glove according to the above preferred embodiment of the present invention, illustrating the use of the glove for sanding purpose.

## Detailed Description of the Preferred Embodiment

Referring to Fig. 1 of the drawings, a glove 1, which is adapted to use for surface treatment of a work surface, according to a preferred embodiment of the present invention is illustrated, wherein the glove comprises a glove body 10, which is adapted for receiving a hand of a user, having a palm portion 11 and finger portions 12 extended therefrom and a surface treatment arrangement 20.

The surface treatment arrangement 20 comprises, a treatment pad 21, adapted to provide a first treating action, provided at the palm portion 11 of the glove body 10 for treating on the work surface, and a treatment member 22, adapted to provide a second treating action, comprising a fastener 221 adapted to detachably fasten with the treatment pad 21 so as to retain the treatment member 22 at the palm portion 11 of the glove body 10 in such a manner that the glove body 10 selectively provides the first treating action and the second treating action by selectively fastening the treatment member 22 with the treatment pad 21 for treating on the work surface.

According to the preferred embodiment, the glove is utilized as a cleaning glove adapted to remove or cleanse unwanted dirt, or specifically, unwanted oxides, attached on a utilizing surface (work surface) of a particular appliance, such as a domestic wok, by rubbing to and fro over the utilizing surface. Accordingly, a user of the present invention, such as a housewife, may wear on the glove and remove residual oxides on her wok or pan by rubbing over the utilizing surface.

The glove body 10, according to the preferred embodiment, is made of durable and waterproof material, such as plastic, such that the user is able to wear the glove of the present invention for operating the cleaning action.

The glove body 10 is shaped and sized to be substantially the same as a hand of an adult of average size, wherein the palm portion 11 and the finger portions 12 of the glove body 10 are arranged to form the substantial hand-like shape. In turn, the palm portion 11 has a palm receiving cavity formed therein for receiving a palm of the hand, whereas the five finger portions 12 have five finger receiving cavities for fittedly and completely receiving five fingers of the hands therein respectively. In other words, each

of the five finger receiving cavities is capable of communicating with the palm receiving cavity so that the hand of the adult can be able to insert and then securely wear on the glove of the present invention.

5 As an obvious alternative, depending on the nature of the surface treatment, the five figure portions 12 may be embodied as having five openings at the tips thereof respectively wherein a tip portion of each of the fingers of the hand is arranged to expose outside the respective finger portion 12 so that the glove body 10 of the glove forms a conventional mitt.

10 The treatment pad 21, which is embodied as a layer of mop, is provided at the palm portion 11 of the glove body 10 wherein the treatment pad 21 comprises a loop fastener 211 as a scouring layer adapted to perform a cleaning action as the first treating action. Accordingly, the treatment pad 21 is provided at a lower side of the palm portion 11 of the glove body 10 by stitching such that when the treatment pad 21 is worn off from the glove body 10, the user is able to replace a new treatment pad 21 by simply removing  
15 the old treatment pad 21 and attaching the new treatment pad 21 on the glove body 10. In addition, the user is able to tailor-cut the treatment pad 21 into a wide variety of shapes and size, and the treatment member 22 having a corresponding size and shape so as to fit the use of the glove of the present invention.

20 Accordingly, the user is able to selectively attach the treatment pad 21 on the palm portion 11 of the glove body 10 at different positions. As shown in Fig. 2, the treatment pad 21 is provided at an upper side of the palm portion 11 of the glove body 10. It is worth to mention that the treatment pad 21 is provided at the palm portion 11 of the glove body 10 such that the treatment pad 21 will not restrict the movements of the user's fingers within the finger portions 12 of the glove body 10 respectively.

25 The treatment member 22, according to the preferred embodiment, has a hooking side 201 forming as the fastener 221 thereon and an opposed sponging side 202 in such a manner that when the fastener 221 is detachably fastened with the treatment pad 21, the sponging side 202 of the treatment member 22 is mounted at the palm portion 11 of the glove body 10 for performing a cleaning action as the second treating action on the  
30 work surface.

Therefore, the user is able to selectively use the loop fastener 211 of the treatment pad 21 to scour on the work surface and the sponging side 202 of the treatment member 22 to clean the work surface by attaching the hooking side 201 of the treatment member 22 on the treatment pad 21. It is worth to mention that the user's fingers are free to pick up or hold the work piece such as a pan or dish without detaching the treatment member 22 from the glove body 10', as shown in Fig. 2.

It is worth to mention that the treatment member 22 is cut into a predetermined shape and size to detachably fasten with the treatment pad 21 so as to fit on the palm portion 11 of the glove body 10.

Fig. 3 illustrates an alternative mode of the treatment member 22A which is directly attached to the loop fastener 211 of the treatment pad 21. As shown in Fig. 3, the treatment member 22A is made of a hook fastener as the fastener 221A to detachably fasten with the treatment pad 21. Accordingly, the fastener 221A is integrally formed as the hook fastener of the treatment member 22A, which is preferably constructed as a ball shape, made of a material having a predetermined coarseness adapted to perform a rubbing action as the second treating action.

Referring to Fig. 4 of the drawings, the surface treating arrangement 20' is utilized for sanding and finishing purpose, wherein the treatment pad 21', which is embodied as a layer of sandpaper, comprises a hook fastener 211' made of a material having a predetermined coarseness adapted to perform a sanding action as the first treating action.

The glove body 10' of the glove, because of its purpose of facilitating surface treatment, is preferably made of durable material, such as genuine leather or artificial leather of a predetermined strength, so that in the process of surface treatment, i.e. the sanding or finishing action, the glove has adequate strength to substantially protect the hand received therein without being broken easily by an external work piece.

Preferably, the hook fastener 211' of the treatment pad 21' is fixedly attached on a lower side of the palm portion 11' of the glove body 10', wherein the hook fastener 211' is embodied as a sand paper layer of a predetermined degree of coarseness so that when the user wears the glove body 10', the user is able to operate the sanding action via



the treatment pad 21' by directly applying a rubbing force at the palm portion 11' of the glove body 10' on the work surface.

5 The treatment member 22' has a looping side 201' forming as the fastener 221' thereon and an opposed coarsening side 202' having a predetermined coarseness different from the treatment pad 21' in such a manner that when the fastener 221' is detachably fastened with the treatment pad 21', the coarsening side 202' of the treatment member 22' is mounted at the palm portion 11' of the glove body 10 for performing the second treating action on the work surface.

10 Accordingly, the treatment member 22' is overlappedly attached on the treatment pad 21' through the hook and loop fasteners 211', 221', such that the user is able to perform a predetermined kind of surface finishing on a particular working surface by wearing on the glove and rubbing the treatment member 22' to and fro on the working surface. Since the hand of the user is completely embedded in the glove, the possibility of being injured during the process of surface finishing could be minimized.

15 The coarsening side 202' of the treatment member 22' has a level of coarseness different from the level of the coarseness of the hook fastener 211' of the treatment pad 21' for fine-treating the work surface so that the surface treatment arrangement 20' provides an optimal surface treatment pack to the user of the present invention for treating different work pieces.

20 For example, the coarsening side 202' of the treatment member 22' has a fine level of coarseness for fine sanding the work surface and the hook fastener 211' of the treatment pad 21' has a rough level of coarseness. Therefore, the user is able to initially rough sanding on the work surface by using the hook fastener 211' of the treatment pad 21' and finally fine sanding on the work surface by using the coarsening side 202' of the treatment member 22' once the treatment member 22' is attached on the treatment pad 21'.

30 It is worth to mention that the user must use the palm to perform the sanding operation since the user can apply a better rubbing force at the palm on the work surface. In addition, the user's fingers are free to hold or pick up the work piece without detaching the treatment member 22' from the glove body 10', as shown in Fig. 4, so as to enhance the efficiency of the sanding operation by using the present invention.

According to the preferred embodiment of the present invention, the treatment member 22' is embodied as capable of being cut into a wide variety of shapes and sizes so as to best suit the specific surface treatment requirement of a specific work piece. In particular, for example, where the work piece has a fairly large working surface which is to be polished, the treatment member 22' is adapted to be cut into a desirable shape and size so as to fit that specific work piece. In other words, the treatment member 22' is adapted to be cut into a desire shape and size to attach on the treatment pad 21' so as to fit on the palm portion 11' of the glove body 10' according to the need of the user.

It is worth to mention that the treatment pad 21' can be provided on an upper side of the palm portion 11' of the glove body 10' so that in certain circumstances, such as in the case of cleaning or polishing a circular working surface where rotational movement of an arm of the user with respect to the work piece is more convenient, the surface treatment arrangement 20' is capable of providing equally optimal surface treatment. Therefore of course, the treatment pad 21' may also be provided on both the upper and lower sides of the palm portion 11' of the glove body 10 so as to further maximizing the surface treatment capability of the glove of the present invention by selectively mounting the treatment member 22' at either the upper or lower side of the palm portion 11' of the glove body 10. In other words, the treatment member 22' can be cut into a predetermined shape and size to detachably fasten with the treatment pad 21' for fitting on the palm portion 11' of the glove body 10' so as to selectively mount the treatment member 22' either at the upper side or the lower side of the palm portion 11' of the glove body 10'.

Moreover, the glove should be constructed to have a protective layer provided at an inner side of the glove body 10' within the palm portion 11' thereof for protecting the hand of the user during the first and second treating actions. Accordingly, during the sanding action, the user must apply the rubbing force at the palm of the user's hand to rub the treatment pad 21' or the treatment member 22' on the work surface. However, heat is created during the sanding action. Therefore, the protective layer, which is preferably made of heat insulating material, is capable of insulating the heat from the work surface transfers towards the palm of the user's hand through the glove body 10'. Alternatively, the glove body 10' can be made of heat insulating material such that the protective layer is integrally formed on the inner side of the glove body 10'.

For the sake of further enhancement, several features may be added on to the glove body 10 of the glove for optimal performance. For instances, a cushion layer may be attached at an inner peripheral surface of the palm receiving cavity so as to provide pressure relief to the user of the present invention while surface treatment is in progress. Moreover, an elastic retaining strip may also be attached to a rear end of the palm portion 11 of the glove body 10 so as to normally restrict a lateral movement between the glove and the hand of the user which has worn on the glove.

It is worth pointing out that when the user of the present invention, for whatever reason, only prefers to work on a particular task without utilizing the sand paper layer or the sourcing layer, of the surface treatment arrangement 20, 20', he/she may then just simply detach the treatment member 22, 22' from the treatment pad 21, 21' attached on the palm portion 11, 11' of the glove body 10, 10' so as to utilize the present invention as a regular glove. Accordingly, when the user prefers the surface treatment function again, he/she may simply re-attach the desire treatment member 22, 22' to the treatment pad 21, 21'.

One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting.

It will thus be seen that the objects of the present invention have been fully and effectively accomplished. It embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure form such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.